

Page 56, line 2, delete .

"CCCCCATCTCCACTTCCTCCCCCTCGAGTGATC" and insert

--CCCCCATCTCCACTTCCTCCCCCTCGAGTGTAC--;

line 3, delete

"AGGGTACCACTATGGGGTCAGCGCCTGTGAGGGATG" and insert

--AGGGTACCACTATGGGGTCAGCGCCTGTGAGGGATGT--;

line 7, delete

"GACGATCTCACAGAGAAGATCCGAAAAGCTCACCAGGAACTTTCCTTCACTCTCG"

and insert

--GACGATCTCACAGAGAAGATCCGAAAAGCTCACCAGGAACTTTCCTTCACTCTGC--.

Page 58, line 2, delete "of";

line 3, after "coding" insert --,--, delete "on" and  
insert --upon--,

line 4, after "host" insert --,--.

IN THE CLAIMS:

Please cancel claim 38 without prejudice or disclaimer and  
amend the following claims:

1. (Twice Amended) A cloned DNA sequence of *hap* gene,  
wherein the sequence has the formula:  
ATGTTTGACTGTATGGATGTTCTGTGAGTGAGTCCTGGGCAAATCCTGGATTCTTCACTGCGAGT  
CCGTCTTCTGCGATGCTCCAGGAGAAAGCTCTCAAAGCATGCTTCAGTGGATTGACCCAAACCGAA  
TGGCAGCATCGGCACACTGCTCAATCAATTGAAACACAGAGCACCAGCTCTGAGGAACTCGTCCCA  
AGCCCCCATCTCCAATTCTCCCCCTCGAGTG[AT]TACAAACCCTGCTTCGTCTGCCAGGACAAA  
TCA  
TCAGGGTACCACTATGGGGTCAGCGCCTGTGAGGGATGTAAGGGCTTTTTCCGCAGAAGTATTCAGA  
AGAATATGATTTCACTTGTCACCGAGATAAGAACTGTGTTATTAATAAAGTCACCAGGAATCGAT  
GCCAATACTGTGCGACTCCAGAAGTGCTTTGAAGTGGGAATGTCCAAAGAATCTGTCAGGAATGACA

GGAACAAGAAAAAGAAGGAGACTTCGAAGCAAGAATGCACAGAGAGCTATGAAATGACAGCTGAGT  
 TGGACGATCTCACAGAGAAGATCCGAAAAGCTCACCAGGAAACTTCCCTTCACTCT[CG]GCCAGC  
 TGG  
 GTAAATACACCACGAATTCCAGTGCTGACCATCGAGTCCGACTGGACCTGGGCCTCTGGGACAAAT  
 TCAGTGAAGTGGCCACCAAGTGCATTATTAAGATCGTGGAGTTTGCTAAACGTCTGCCTGGTTTCA  
 CTGGCTTGACCATCGCAGACCAAATTACCCTGCTGAAGGCCGCTGCCTGGACATCCTGATTCTTA  
 GAATTTGCACCAGGTATACCCCAGAACAAGACACCATGACTTTCTCAGACGGCCTTACCCTAAATC  
 GAACTCAGATGCACAATGCTGGATTTGGTCCTCTGACTGACCTTGTGTTACCTTTGCCAACCAGC  
 TCCTGCCTTTGGAAATGGATGACACAGAAACAGGCCTTCTCAGTGCCATCTGCTTAATCTGTGGAG  
 ACCGCCAGGACCTTGAGGAACCGACAAAAGTAGATAAGCTACAAGAACCATTGCTGGAAGCACTAA  
 AAATTTATATCAGAAAAAGACGACCCAGCAAGCCTCACATGTTTCCAAAGATCTTAATGAAAATCA  
 CAGATCTCCGTAGCATCAGTGCTAAAGGTGCAGAGCGTGTAATTACCTTGAAAATGGAAATTCCTG  
 GATCAATGCCACCTCTCATTTCAAGAAATGATGGAGAATTCTGAAGGACATGAACCCTTGACCCCAA  
 GTTCAAGTGGGAACACAGCAGAGCACAGTCCTAGCATCTCACCAGCTCAGTGGAACAGTGGGG  
 TCAGTCAGTCACCACTCGTGCAATAA,

wherein said DNA is in an isolated and purified form and encodes a  
 retinoic acid receptor comprising a DNA binding domain and a  
 hormone binding domain.

57. (Amended) A [cloned] DNA fragment comprising a portion  
of a DNA sequence, wherein the DNA sequence encodes [encoding] a  
polypeptide of hap gene, [wherein] and the DNA [sequence has a  
formula] fragment comprises a nucleotide sequence selected from  
 the group consisting of sequences:

- (a) GTCAGGAATGACAGGAACAAGAAAAAGAAGGAGACTTCGAAGCAAGAATGC;
- (b) GCTGAGTTGGA[C]GATCTCACAGAGAAGATCCGA;
- (c) GGGGTCA[C]GTCAGTCACCACTCGTGCAA;

(d) AATGACAGGAACAAGAAAAAGAAGGAGACT;

(e) ATGTTTGACTGTATGGATGTTCTGTCAGTGAGTCCTGGGCAAATCCT[C]GGATTT  
CTACACTGCG  
AGTCCGTCTTCCTGCATGCTCCAGGAGAAAGCTCTCAAAGCATGCTTCAGTGGATTGACCCAAACCG  
GAA  
TGGCAGCATCGGCACACTGCTCAATCA; and

(f) CATGAACCCTTGACCCCAAGTTCAAGTGGGAACACAGCAGAGCACA[C]GTCCTAG  
CATCTCACCC  
AGCTCAGTGGAAAACAGTGGGGTCA[C]GTCAGTCACCACTCGTGCAA,

wherein sequence (a) encodes amino acid residues 151 to 167,  
sequence (b) encodes amino acid residues 175 to 185, sequence (c)  
encodes amino acid residues 440 to 448, sequence (d) encodes amino  
acid residues 153 to 162, sequence (e) encodes amino acid residues  
1 to 53, and sequence (f) encodes amino acid residues 413 to 448  
of the mature retinoic acid receptor- $\beta$  polypeptide.

4. (Twice Amended) A DNA [sequence] fragment as claimed in  
claim 57, wherein the nucleotide sequence [has the formula:  
GTCAGGAATGACAGGAACAAGAAAAAGAAGGAGACTTCGAAGCAAGAATGC] is sequence  
(a).

5. (Twice Amended) A DNA [sequence] fragment as claimed in  
claim 57, wherein the nucleotide sequence [has the formula:  
GCTGAGTTGGACCATCTCACAGAGAAGATCCGA] is sequence (b).

6. (Twice Amended) A DNA [sequence] fragment as claimed in  
claim 57, wherein the nucleotide sequence [has the formula:  
GGGGTCACTCAGTCACCACTCGTGCAA] is sequence (c).

7. (Twice Amended) A DNA [sequence] fragment as claimed in claim 57, wherein the nucleotide sequence [has the formula: AATGACAGGAACAAGAAAAAGAAGGAGACT] is sequence (d).

8. (Twice Amended) A DNA [sequence] fragment as claimed in claim 57, wherein the nucleotide sequence [has the formula: ATGTTTGACTGTATGGATGTTCTGTCAGTGAGTCCTGGGCAAATCCTCGATTTCTACACTGCGAGTCTCTTCCTGCATGCTCCAGGAGAAAGCTCTCAAAGCATGCTTCAGTGGATTGACCCAAACCGAATGGCATCGGCACACTGCTCAATCA] is sequence (e).

9. (Twice Amended) A DNA [sequence] fragment as claimed in claim 57, wherein the nucleotide sequence [has the formula: CATGAACCCTTGACCCCAAGTTCAAGTGGGAACACAGCAGAGCACACTCCTAGCATCTCACCCAGCTGTGGAAAACAGTGGGGTCACTCAGTCACCACTCGTGCAA] is sequence (f).

Claim 39, line 1, before "DNA" insert --A--✓, delete "38" and insert --59--.✓

Claim 40, line 1, before "DNA" insert --A--.✓

Claim 41, line 2, delete "38" and insert --59--.✓

Claim 42, line 2, delete "38" and insert --59--.✓

58. (Amended) A method for identifying a ligand [to] for a retinoic acid receptor, said method comprising:

(A) isolating DNA sequences having a retinoic acid receptor ligand-binding domain and a DNA-binding domain;

(B) constructing a chimeric gene by substituting operative portions of the DNA-binding domain region of the DNA sequence of step (A) with operative portions of a DNA-binding domain region from human oestrogen receptor;

(C) introducing into a suitable receptor-deficient host cell: (1) the chimeric gene from step (B), and (2) [the oestrogen-responsive] a reporter gene [vit-tk-CAT] functionally linked to an operative hormone response element, wherein the hormone response element is capable of being activated by the DNA-binding domain region of the receptor protein encoded by the chimeric gene of step (B);

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wch.  
(D) challenging the transfected host cell from step (C) with at least one compound to be evaluated for ligand binding activity with a chimeric receptor protein encoded by the chimeric gene of step (B);

(E) monitoring induction of the reporter gene;

(F) identifying as a functional ligand(s) that ligand(s) which is capable of inducing production of the protein product of the reporter gene.

Please add the following new claim:

--59. A DNA sequence comprising a nucleotide sequence:

6<sup>14</sup>  
CCCATGC  
GAGCTGTTTGAGGACTGGGATGCCGAGAACGCGAGCGATCCGAGCAGGGTTTGTCTGGGCACCGT  
ATGTTTGACTGTATGGATGTTCTGTCTAGTGAGTCCTGGGCAAATCCTGGATTTCTACACTGCGAGT  
CC  
GTCTTCCTGCATGCTCCAGGAGAAAGCTCTCAAAGCATGCTTCAGTGGATTGACCCAAACCGAATG  
GCAGCATCGGCACACTGCTCAATCAATTGAAACACAGAGCACCAGCTCTGAGGAACTCGTCCCAAG  
CCCCCATCTCCACTTCCTCCCCCTCGAGTGACAAACCCTGCTTCGTCTGCCAGGACAAATCATC  
AGGGTACCACTATGGGGTCAGCGCCTGTGAGGGATGTAAGGGCTTTTCCGCAGAAGTATTCAGAAG  
AATATGATTTACACTTGTCACCGAGATAAGAACTGTGTTATTAATAAAGTCACCAGGAATCGATCG  
CAATACTGTCTGACTCCAGAAGTGCTTTGAAGTGGGAATGTCCAAAGAATCTGTCAGGAATGACAGG